the same amount of lower olefines less feed is required. In addition relative to steam cracking of naphtha, steam cracking of Fischer-Tropsch heavy hydrocarbons resulted in an increased production of ethene, propene, butene and a lower production of hydrogen, methane and carbon monoxide.

Accordingly, the present invention provides a method for the preparation of lower olefines by steam cracking, wherein

the feed comprises heavy hydrocarbons obtained by Fischer-Tropsch synthesis are subjected to steam cracking in a naphtha designed steam cracking furnace for steam cracking the Fischer-Tropsch hydrocarbons into the lower olefines.

Preferably, the steam cracking of Fischer-Tropsch heavy hydrocarbons is carried out in a conventional naphtha designed steam cracking furnace comprises a convection zone provided a first preheating zone in which the Fischer-Tropsch feed is heated, a second preheating zone in which the heated Fischer-Tropsch hydrocarbons are heated in the presence of steam to form a mixture of liquid and gaseous Fischer-Tropsch hydrocarbons; and a super heating zone in which the liquid and gaseous Fischer-Tropsch hydrocarbons are super heated; and a cracking zone in which the gaseous super heated Fischer-Tropsch hydrocarbons are steam cracked into the lower olefines.

For the purposes of this invention a petroleum derived naphtha is defined as the fraction starting at C_5 to a final boiling point of between 170-230 °C

The initial and final boiling point of naphtha are lower than the initial and final boiling point of the heavy Fischer-Tropsch hydrocarbons. This may have as an effect that the feed to the second preheating zone is not a gas but is still a mixture of gas and liquid.

C L A I M S

1. Method for the preparation of lower olefines by steam cracking, wherein

the feed comprises heavy hydrocarbons obtained by Fischer-Tropsch synthesis are subjected to steam cracking in a naphtha designed steam cracking furnace for steam cracking the Fischer-Tropsch hydrocarbons into the lower olefines.

2. Method as claimed in claim 1 wherein the naphtha designed steam cracking furnace comprises a convection zone provided a first preheating zone in which the Fischer-Tropsch feed is heated, a second preheating zone in which the heated Fischer-Tropsch hydrocarbons are heated in the presence of steam to form a mixture of liquid and gaseous Fischer-Tropsch hydrocarbons; and a super heating zone in which the liquid and gaseous Fischer-Tropsch hydrocarbons are super heated; and a cracking zone in which the gaseous super heated Fischer-Tropsch hydrocarbons are steam cracked into the lower olefines.

3. Method as claimed in claim 2, wherein the feed for the second preheating zone comprises less than 50 wt.%, preferably less than 25 wt.%, more preferably less than 10 wt.% liquid Fischer-Tropsch hydrocarbons.

4. Method as claimed in claims 1-3, wherein the weight ratio of steam to Fischer-Tropsch hydrocarbons is 0.4-0.8, preferably 0.5-0.75, more preferably 0.60-0.70.

5. Method as claimed in claims 1-4, wherein the Fischer-Tropsch hydrocarbons have an initial boiling point of above 150 °C and a final boiling point of below 400 °C.

6. Method as claimed in claims 1-5, wherein the Fischer-Tropsch hydrocarbons comprise more than 75 wt.% n-paraffines

7. Method as claimed in claim 6, wherein the n-paraffines have a carbon number of 5-25, preferably 7-23, more preferably 10-20.

8. Method as claimed in claims 1-7, wherein the Fischer-Tropsch hydrocarbon feed is obtainable by fractional distillation of hydrocarbons originating from a Fischer-Tropsch synthesis at a temperature of 100-380 °C, preferably 150-370 °C, and more preferably at 200-360 °C, by hydro cracking of Fischer-Tropsch hydrocarbons, or by thermal cracking of Fischer-Tropsch hydrocarbons.

9. Method as claimed in claims 1-8, wherein the Fischer-Tropsch hydrocarbons are essentially free of aromatic compounds, N-compounds and/or S-compounds.